

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled).
2. (Withdrawn) An isolated nucleotide sequence that mediates male fertility in plants comprising a nucleotide sequence encoding any of the amino acid sequences of SEQ ID NOs. 2, or 4 and those sequences which hybridize to the nucleotide sequences encoding any of the amino acid sequences of SEQ ID NOs. 2, or 4 under highly stringent conditions.
3. (Currently Amended) An isolated ~~DNA-molecule~~ nucleotide sequence that ~~mediates~~ impacts fertility in plants comprising a nucleotide sequence of any of SEQ ID NOs: 1, 3, or 7 and those sequences which hybridize to the nucleotide sequences of SEQ ID NOs: 1, 3, or 7 under highly stringent conditions with a wash of 2X SSC, 0.5% (w/v) SDS, at 65°C for 30 minutes.
4. (Currently Amended) A plant cell transformed by the nucleotide sequence of Claim ~~1~~ 3.
5. (Withdrawn) A plant cell transformed by the nucleotide sequence of Claim 2.
6. (Cancelled).
7. (Cancelled).
8. (Withdrawn) A plant transformed by a nucleotide sequence of Claim 2.
9. (Original) A plant transformed by a nucleotide sequence of Claim 3.
10. (Currently Amended) The plant of Claim ~~7~~ 9, wherein the plant is maize.
11. (Currently Amended) The plant cell of Claim 4, wherein the cell is a maize cell.
12. (Currently Amended) A method of impacting fertility of a plant ~~comprising wherein the method comprises~~ -impacting a nucleotide sequence in the plant comprising the SBMu200 gene nucleotide sequence of claim 3.
13. (Currently Amended) A method of impacting fertility of a plant ~~comprising wherein the method comprises~~ -impacting a nucleotide sequence in the plant encoding the amino acid

sequence of any of SEQ ID NOs: 2, or 4, or the nucleotide sequences of any of SEQ. ID NOs: 1, 3, or 7 and those sequences which hybridize to any of said sequences under highly stringent conditions with a wash of 2X SSC, 0.5% (w/v) SDS, at 65°C for 30 minutes.

14. (Currently amended) The method of Claim 12, wherein the sequence expression is repressed.
15. (Currently amended) The method of Claim 12, wherein expression of the nucleotide sequence is repressed by mutation of the nucleotide sequence.
16. (Withdrawn) The method of Claim 12 further comprising delivering into the plant a second nucleotide sequence which represses expression of the nucleotide sequence.
17. (Withdrawn) The method of Claim 16 further comprising delivering into the plant a second nucleotide sequence molecule oriented in the antisense direction relative to the DNA molecule thereby repressing expression of the DNA molecule.
18. (Withdrawn) The method of Claim 12 wherein a native SBMu200 gene in a plant is silenced and a second SBMu200 gene linked to an inducible promoter is introduced into the plant such that the plant is constitutively male sterile and fertility is induced by inducing the promoter.
19. (Withdrawn) A method of producing hybrid seed, comprising: (a) planting in cross-pollinating juxtaposition, a first seed from a selected male fertile parent line and a second seed selected from a female parent line having male sterility produced according to the method of Claim 12; (b) growing the seed to mature plants under conditions which do not induce expression of the second DNA molecule; (c) cross-pollinating the male sterile female plant with pollen from the male fertile plant; and (d) harvesting seed from the male sterile female plant.
20. (Withdrawn) The method of claim 19 further comprising cross-fertilizing the male sterile plant with a second plant, the second plant comprising a second exogenous gene, the product of the second gene preventing disruption of the male tissue by the first exogenous gene, producing a male fertile hybrid plant.
21. (Withdrawn) The method of claim 19 wherein the gene impacting male fertility is dominant and further comprising growing the hybrid seed to produce a third male sterile parent plant;

producing a fourth parent plant comprising one or more genes controlling a desired gene trait and cross-fertilizing the third and fourth parent plants to produce second hybrid seed.

22. (Withdrawn) A male fertility mediated plant produced according to the method of Claim 12.
23. (Withdrawn) A method of providing heritable externally controllable male sterility in a plant comprising linking SBMu200 in an expression sequence with an inducible promoter responsive to external control; delivering the expression sequence into the genome of the plant; and inactivating a second DNA molecule which codes for the product of SBMu200 from the native genome of the plant.
24. (Withdrawn) The method of claim 23 wherein the nucleotide sequences comprise the nucleotide sequences encoding the amino acids of SEQ ID Nos. 2, 4 or 8 or having the nucleotide sequence of any of SEQ. ID Nos. 1, 3, or 7 and those nucleotide sequences which hybridize to any of said sequences.
25. (Withdrawn) A method of reproducing a plant having heritable, externally controllable male sterility produced according to the method of Claim 23 further comprising planting seed of the plant to provide growing male sterile plants; inducing conversion of the growing plants to male fertile form under conditions which induce the promoter to express the first DNA molecule; and open-pollinating the growing plants in isolation to produce seed; and harvesting the seed.
26. (Withdrawn) A controllably male sterile plant produced according to the method of Claim 23.
27. (Currently Amended) An expression vector comprising the ~~DNA~~nucleotide sequence of Claim ~~43~~.
28. (Cancelled)
29. (Cancelled)
30. (Cancelled)
31. (Original) Plant cells comprising the vector of claim 27.
32. (Currently Amended) A method of ~~mediating~~ impacting male fertility in a plant ~~comprising wherein the method comprises~~ -introducing into a plant the expression vector of

claim 27, wherein the ~~exogenous gene~~ nucleotide sequence of the vector impacts male fertility of the plant ~~and the promoter control expression of the exogenous gene~~

33. (Cancelled)

34. (Original) A nucleotide sequence as represented in ATCC deposit no. 98931.

35 – 58 (Cancelled)